



Montana Department of Transportation OJT Program Evaluation Change 2

Proposal by:

Dr. Paul E. Polzin
Bureau of Business and Economic Research
The University of Montana

Submitted to:

Sue Sillick
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59620-1001

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**BUREAU OF
BUSINESS
AND ECONOMIC
RESEARCH**

The University of Montana
Bureau of Business and Economic Research
32 Campus Drive, #6840
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The University of
Montana

Introduction

The Montana Department of Transportation needs information about the experiences of trainees in the MDT On-the-Job Training (OJT) Program. Obtaining this information is an important step in the MDT's process of monitoring the quality of the OJT program, and will enable MDT to report this information to the Federal Highway Administration and to the contracting community. Bureau of Business and Economic Research (BBER) at The University of Montana-Missoula proposes administering surveys of individuals involved with the OJT process to gather this information. The proposal is divided into nine sections:

1. Study Design
2. Questionnaire Development
3. Sampling
4. Survey Administration
5. Data Preparation/Tabulation
6. Bureau Personnel
7. Deliverables
8. Schedule
9. Cost
10. Study Team Resumes

Study Design

The Bureau recommends conducting this study in three phases (see the table below). In Phase 1, BBER will conduct a World-Wide Web (WWW) based survey of state department of transportation agencies around the United States to learn about the structure of their OJT programs, the successful components of their programs, and aspects that they might wish to change. The data from Phase 1 will be used to inform the design of data collection instruments for the next phase of data collection. Phase 2 will focus on gathering data from individuals who are involved in MDT's OJT program. In Phase 2 data will be gathered from OJT trainees, MDT personnel, and contractors. In Phase 3 the data collected in the previous two phases will be analyzed and a report produced.

<u>Time Period</u>	<u>Respondents</u>	<u>Method</u>
Phase 1	State transportation professionals	World-Wide Web Survey
Phase 2	Trainees, contractors, MDT employees	Telephone Surveys
Phase 3	Data from previous phase respondents	Statistical analysis and reporting

Questionnaire Development

The Bureau will design each of the four questionnaires required in coordination with MDT. The questionnaires will include items designed to meet the research needs of MDT. BBER will use an iterative process to design each questionnaire. BBER suggests that MDT review each first draft and direct changes as needed.

The topic areas addressed in the questionnaires developed will include:

1. Contractors' and MDT staff's opinions on the adequacy of OJT to prepare trainees for future highway contracting-related jobs;
2. Reasons trainers quit OJT positions;
3. Factors that retain OJT trainees through program completion;

4. Demographic characteristics of OJT trainees most likely to complete the program or leave;
5. Impacts on contractors of providing OJT;
6. Factors that preclude contractors from providing highest quality training;
7. The value MDT adds to high quality OJT training;
8. American Indian cultural values that impact OJT training;
9. The effect of worker classifications on retaining OJT trainees;
10. Contractor opinions on the value of focused vs. broader OTJ training;
11. OJT trainees' opinions about workforce behavior toward them in the areas of equal opportunity.

While the WWW questionnaire will undergo expert usability testing, upon approval from MDT it will be considered ready for fielding.

The new drafts for the remaining three questionnaires will be tested by BBER using 5 cognitive interviews.¹ Cognitive interviews are an intensive, 1-1.5 hour examination of the cognitive processes respondents use to answer each question. The interviews will employ retrospective and concurrent think aloud strategies in which respondents are asked to "think aloud" their answers. Some respondents make errors that are caused by habits of mind or question wording when reporting attitudes and behavior. Cognitive interviewing can examine the common thinking habits respondents use when recalling and reporting attitudes and behaviors. This gives questionnaire designers the opportunity to tailor the question to the way people think.

Following revision based on cognitive interview results and consultations, MDT will be the final approval authority for the questionnaire.

Sampling

There will be no sampling for this study in the sense that no random selection of respondents will take place. Rather, respondents will be selected for each of the four data gathering from lists provided to BBER by MDT. It is BBER intention to conduct an interview with each respondent on the lists supplied by MDT. In terms of estimates produced from the data gathered, there will be no sampling error associated with this study. While this study method provides the advantage of having no sampling error, it is, like most other data gathering efforts with human respondents, subject to possible problems associated with non-response. BBER's efforts to maximize response rates will be described in the Survey Administration section below.

Survey Administration

The WWW questionnaire will be administered using the dedicated, secure, WWW computer server at BBER. BBER's computer programming professionals have extensive experience conducting WWW surveys with named persons in Montana and through the United States. State transportation professionals will receive a unique login and password to make sure that no unauthorized completions take place. Non-respondents will be prompted up to three additional times to maximize survey participation.

The telephone questionnaires will be administered using a Computer-Assisted Telephone Interviewing (CATI) process. Each interview will take between ten and fifteen minutes. Bureau staff will program and validate the CATI system prior to survey administration. The interviews will be conducted in the dedicated telephone interview facility at BBER. This state of the art facility contains twelve sound insulated telephone interview stations (expandable to twenty-four stations), plus viewing and monitoring

¹ Presser, Stanley, et. al. eds. 2004. *Methods for Testing and Evaluating Questionnaires*. New York: John Wiley & Sons. p. 24.

capability for supervisors. The supervisor's visually observe interviewers and randomly monitor telephone call. Call monitoring is a vital quality control mechanism that reinforces data quality.

Each station is equipped with a telephone, headset, and computer, allowing CATI operation. The interviewers read the survey from the computer screen and directly enter the pre-coded responses into the computer, speeding the data capture process and minimizing the opportunity for errors.

The interviews will be conducted using the Bureau cadre of trained and experienced telephone interviewers and shift supervisors. There are twenty interviewers currently on the BBER staff, only three are University students. BBER shift supervisors are themselves seasoned interviewers with years of experience conducting surveys for a variety of organizations, including the US Bureau of the Census. New interviewers receive classroom and "on the job" training, and are closely monitored by the shift supervisors.

BBER proposes to interview each OJT trainee for which locating information is available near the end of the construction season. Success in Phase 2 data collection hinges on MDT obtaining adequate locating information from a sufficient number of trainees to warrant a data collection effort. Adequate locating information is defined as a current home telephone number and address. BBER needs the cooperation of MDT staff so that BBER and MDT can work together to develop a practical plan to obtain as much locating information on OJT trainees as possible. BBER recommends that locating information be obtained by MDT as a pre-requisite for OJT program participation.

Telephone administration of the trainee surveys is the best method because response rates for self-administered surveys may be too low. In addition, self-administered surveys put more burden on respondents than do telephone surveys. Finally, mailed self-administered surveys can require up to eight weeks to administer assuming a sufficient number of follow-ups to obtain a defensible response rate. BBER does not recommend relying upon contractors or OJT supervisors to obtain self-administered questionnaires from trainees. Contractor-administered surveys place too much burden on contractors, will be seen as intruding on the work day, and provide too much possibility for data collection failure.

The ideal method for collecting data from trainees would be to send BBER interviewers to job sites around Montana to administer questionnaires during work breaks or just before or after work. However, the cost of this option would be several times the cost of the telephone option. BBER is willing to undertake this option for a significantly increased cost if MDT wishes to consider it.

BBER will document case status in a manner that allows calculation and reporting of a unit response rate for each data collection effort using the American Association for Public Opinion Research (2004) standard definition (RR3):²

$$RR3 = \frac{I}{(I + P) + (R + NC + O) + e(UH + UO)}$$

I = Complete interview
P = Partial interview
R = Refusal and break-off
NC = Non-contact

² American Association for Public Opinion Research. 2004. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 3rd edition. Lexana, Kansas: AAPOR. p. 29.

O = Other
UH = Unknown if household/occupied housing unit
UO = Unknown, other
e = Estimated proportion of cases of unknown eligibility that are eligible

Data Set Preparation and Reporting

Following collection the data will be inspected and appropriate data labels will be added. Composite variables and flags will also be added the data set to facilitate analysis. BBER will produce a database of responses according to specifications developed in cooperation with MDT. The Bureau will deliver the electronic data set in Excel.

The BBER team will tabulate the survey data and produce a concise report that documents survey results and methods. BBER will describe the data collected using frequencies, cross-tabulations, standard measures of central tendency (mean, median, and mode), chi-square tests, and t-tests. The final report will be delivered in MS Word and .PDF formats.

Bureau Personnel

Paul E. Polzin, Director of the Bureau of Business and Economic Research, is the Administrator for this project. Since the early 1980's Dr. Polzin has led the Bureau in conducting survey research and producing forecasts of Montana's economy for the Governor's office and the Montana Legislature. Dr. Polzin will supervise all aspects of administration, data collection, analysis, and reporting on this project. Dr. Polzin is a Professor in the School of Business Administration at The University of Montana.

Jim Sylvester is the Bureau's Director of Survey Operations. Mr. Sylvester has analyzed Montana's economy and demographics for the Bureau since 1980. Mr. Sylvester's areas of expertise include survey sampling, CATI programming, and telephone survey data collection. Mr. Sylvester is a recognized authority on Montana demographics, and has published extensively on the subject. Mr. Sylvester's specific duties on this project include:

- Conduct CATI programming
- Supervise WWW programming;
- Sampling;
- Supervise telephone data collection;
- Prepare the data for analysis;
- Produce the data set;
- and assist in data reporting.

John Baldridge is BBER's Director of Survey Development. Mr. Baldridge has an extensive background in survey research. His experiences were gained as an independent contractor in Montana and while in the employ of the University of Chicago's National Opinion Research Center, the nation's foremost non-profit, academically-based, survey research center. Mr. Baldridge is a member of the American Association for Public Opinion Research. On this project Mr. Baldridge will:

- Develop and test the questionnaires,
- Assist in data set preparation, and
- Produce the final report and summary of research methods.

Deliverables

1. Phase Progress Reports. BBER will submit a brief progress report one week after completion of each project phase.
2. Draft Report and Methods Summary. The report will include a description of the data collected and major findings, a copy of the questionnaires used, Gallup Tables of the survey results, and a description of the statistical processes used.
3. Final Tabulation and Methods Summary. The final tabulation will incorporate changes or additions requested by MDT as appropriate.
4. Data Set. The Bureau will produce and deliver to MDT a data set that will be available after completion of the final report. The data set will be in an electronic format specified by MDT.

Schedule

The total time required to complete this project is approximately twenty-two weeks. A specific description of the time required for each work element is found below:

Phase 1. Phase 1 will require 6-8 weeks, including questionnaire development, obtaining of a list of state transportation professionals, and data collection with up to five contacts of non-respondents.

Phase 2. Phase 2 will occur immediately after the conclusion of Phase 1 and will require 6-8 weeks. The time required for this phase of the study includes questionnaire development, cognitive interviewing, and telephone data collection for three separate groups of respondents.

Phase 3. Phase 3 will require 4-6 weeks including delivery of the draft report, MDT review, and incorporating final edits as required.

Cost

The total cost for this project is \$18,315. This study contains several key quality assurance features including:

- Cognitive interviewing
- Field testing;
- Extensive interviewer training, including questionnaire specific training; and
- Extensive interviewer supervision and monitoring.

The study presented here also purchases the full capacity of BBER's new, state-of-the-art, telephone interview facility, which includes:

- Twelve sound-insulated CATI stations (expandable to 24);
- Full monitoring capability for supervisors;
- BBER's cadre of trained and experienced interviewers.

**MDT OJT
Evaluation Project
Draft Budget
July 12, 2005**

Personal Services	
Wages and Salaries	
Survey Operations Director (3,500/mo)	2,625
Survey Development Director (3,100/mo)	4,650
Computer Programmer (3,200/mo)	800
Permanent Supervisors and Interviewers	2,000
Temporary Employees	2,000
Total Wages and Salaries	12,075
Employee Benefits	
Survey Directors (30.5% + 506/mo)	3,357
Computer Programmer (30.5% + 506/mo)	371
Permanent Superv./ Interviewer Benefits (30.5% + 506/mo)	1,243
Temporary Employees (10%)	200
Total Employee Benefits	5,170
TOTAL PERSONAL SERVICES	17,245
Operating Expenses	
Supplies/Printing	250
Postage	100
Travel	220
Communication (includes fixed phone charge)	500
TOTAL OPERATING EXPENSES	1,070
TOTAL DIRECT COSTS	18,315
UM CENTRAL ADMINISTRATION	
INDIRECT COSTS (0% of TDC)	0
TOTAL	18,315

All budgets are subject to the approval of University of Montana Research Administration.

Study Team Resumes

PAUL ELMER POLZIN

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Missoula, MT 59802
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University of Montana
Missoula, MT 59812
(406) 243-5113

Fields of Specialization: Regional Economics, Applied Econometrics, Economic Theory

EDUCATION

DEGREES: Ph.D. in Economics, Michigan State University, 1968
M.A. in Economics, Michigan State University, 1968
B.A. in Economics, University of Michigan, 1964

EXPERIENCE

University of Montana: Director, Bureau of Business and Economic Research	1988 to Present
University of Montana: Research Associate, Bureau of Business and Economic Research	1968-1988
University of Montana: Director of Economic Forecasting, Bureau of Business and Economic Research	1983-1988
University of Montana: Professor of Management	1977 to Present
Montana Department of Natural Resources, Division of Forestry: Consulting Economist	1977-1980
University of Montana: Associate Professor of Management	1973-1977
U.S. Forest Service: Consulting Research Economist	1972-1978
University of Montana: Assistant Professor of Management	1971-1973
University of Montana: Assistant Professor of Economics	1968-1970
Michigan State University: Graduate Assistant and Assistant Instructor of Economics	1965-1968

PEER REVIEWED PUBLICATIONS

"Misperceptions About Forests and Wood Products: A Statewide Survey in Montana," **Forest Products Journal**, September 1999.

"Spatial Distribution of Wood Products Industries," **Journal of Forestry**, May 1994.

"Timber Vital to Economic Well-Being," **Forum for Applied Research and Public Policy**, Fall 1992.

"The Verification Process and Regional Sciences," **The Annals of Regional Science**, January 1990.

"Forecasting Accuracy and Structural Stability of the Economic Base Model," **The Review of Regional Studies**, Spring 1988 (with Kent Connaughton, Con H Schallau, and James T. Sylvester).

"Trends in the Wood and Paper Products Industry: Their Impact on the Pacific Northwest Economy," **Journal of Forestry**, November 1987 (with Charles E. Keegan III).

"The Specification of Price in Studies of Consumer Demand under Block price Scheduling: Additional Reply," **Land Economics**, August 1986.

"Tests of the Economic Base Model of Growth for a Timber Dependent Region," **Forest Science**, August 1985 (with Kent Connaughton and Con H Schallau).

"The Specification of Price in Studies of Consumer Demand under Block Price Scheduling: Reply," **Land Economics**, August 1985.

"The Specification of Price in Studies of Consumer Demand Under Block Price Scheduling: Additional Empirical Evidence," **Land Economics**, August 1984.

"The Impact of Economics Trends on Higher Education Enrollment," **Growth and Change**, April 1984.

"Characterizing Economic Trends in Small, Resource Dependent Communities," **The Southwestern Review of Management and Economics**, Spring 1983 (with Con H Schallau).

"Urban Labor Markets: A Two-Sector Approach," **Growth and Change**, January 1977.

"Local Service Employment and City Size," **Land Economics**, November 1976.

"Aggregate Intersectoral Relationships in Urban Areas: A Study of Localized Employment for SMSAs," **Annals of Regional Science**, February 1974.

"Urban Employment Models: Estimation and Interpretation," **Land Economics**, May 1973.

"State and Regional Wage Differences," **Southern Economic Journal**, January 1972.

"Off-Farm Work: A Marginal Analysis," **Quarterly Journal of Economics**, August 1971 (with Peter MacDonald).

"Regional Labor Markets: A Simple Analysis," **Annals of Regional Science**, June 1970.

OTHER PUBLICATIONS

More than forty articles appearing in the **Montana Business Quarterly** since 1969.

Some Economic Impacts of the 1988 Fires in the Yellowstone Area. Research note INT-418, USDA Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT, 1993 (with Michael S. Yuan and Ervin G. Schuster).

Attitudes and Opinions about Environmental Quality, Bureau of Business and Economic Research, University of Montana, 1990 (with Susan Selig Wallwork, James T. Sylvester, and Mary L. Lenihan).

Attitudes and Opinions about the Forest Products Industry, Bureau of Business and Economic Research, University of Montana, 1988.

Montana's Coal Industry: Facing an Uncertain Future, Bureau of Business and Economic Research, University of Montana, 1984.

Considering Departures from Current Timber Harvesting Policies: Case Studies of Four Communities in the Pacific Northwest, Research Paper PNW-306, USDA-Forest Service, Pacific Northwest Range and Experiment Station, Portland, OR, 1983 (with Con H Schallau).

"Methodology for Estimating Employment Impact of a Change in Timber Input," in Charles E. Keegan III, **Montana's Forest Products Industry: A Descriptive Analysis,** Bureau of Business and Economic Research, University of Montana, 1980, pp. 63-68.

Montana Outdoor Recreation Survey, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1980 (with Susan Selig Wallwork and Mary L. Lenihan).

Housing Needs and Preferences: A Survey of Montana Households, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1979 (with Susan Selig Wallwork and Maxine C. Johnson).

Montana's Major Energy Transportation System: Current Conditions and Future Developments, Montana Energy Advisory Council, Helena, MT, 1976.

The Economic Importance of Montana Refineries and Projected Impacts of Curtailments in Canadian Imports, Montana Energy Advisory Council, Helena, MT, 1976.

Economic Importance of Tourism in Montana, Research Paper INT-171, USDA-Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT, 1974 (with Dennis Schweitzer).

Economic Report to the Governor of Montana, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1974 (with Maxine Johnson and Maurice Taylor).

Water Use and Coal Development in Eastern Montana, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1974.

"Employment in Montana 1960: Analysis by Industry and Occupation," **Staff Study of the Montana Economic Study**, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1970.

"Employment Trends in Montana: 1950-1960," **Staff Study of the Montana Economic Study**, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1970.

"Structural Determinants of Wage and Income Levels in Montana," **Staff Study of the Montana Economic Study**, Bureau of Business and Economic Research, University of Montana, Missoula, MT, 1970.

MEETINGS AND CONFERENCES

"Absolutely, Positively My Last Paper About Economic Base," presented at the Thirty-seventh Annual Meeting of the Western Regional Science Association, Monterey, CA, February 1998.

"Barro Growth Models vs. Economic Base: Which Work Best?" presented at the Thirty-sixth Annual Meeting of the Western Regional Science Association, Kamuela, HI, February 1997

"Local Economic Outlook Conferences: How To Do Them," presented at the annual meeting of the Association for University Business and Economic Research (AUBER), Boulder, CO, October 1995.

"Expanding the Utility of the Economic Base Model," presented at the Twenty-ninth Annual Meeting of the Western Regional Science Association, Molokai, HI, February 1990 (with Con H Schallau, Kent Connaughton, and James T. Sylvester).

"Transfer Payments and Property Income as Sources of Economic Growth in the Pacific Northwest," presented at the Twenty-first Annual Meeting of the Pacific Northwest Regional Economic Conference, Seattle, WA, May 1987. Reprinted in the Conference Proceedings (with Kent Connaughton, Con H Schallau, and James T. Sylvester).

"Regional Development: Theory and Policy," the President's Invited Panel, Twenty-sixth Annual Meeting of the Western Regional Science Association, Kona, HI, February 1987.

"The Role of Transfer Payments and Property Income in Economic Base Analysis," presented to the Twenty-sixth Annual Meeting of the Western Regional Science Association, Kona, HI, February 1987 (with Kent Connaughton, Con H Schallau, and James T. Sylvester).

"The Economic Outlook for Montana," presented at the Twentieth Annual Pacific Northwest Regional Economic Conference, Missoula, MT, May 1986.

"How Accurate are Forecasts Based on the Economic Base Model?," presented at the Twenty-fifth Annual Meeting of the Western Regional Science Association, Laguna Beach, CA, February 1986 (with Kent Connaughton, Con H Schallau, and James T. Sylvester).

"The Relationship Between Derivative and Basic Sectors in Timber Dependent Communities" presented at the Nineteenth Annual Pacific Northwest Regional Economics Conference, Portland, OR, May 1985 (with Kent Connaughton and Con H Schallau).

"A New Look at an Old Theory: The Economic Base," presented at the TwentyFourth Annual Meeting of the Western Regional Science Association, San Diego, CA, February 1985 (with Kent Connaughton and Con H Schallau).

"Conventional Wisdoms and Economic Planning in the Pacific Northwest," presented at the Eighteenth Annual Pacific Northwest Regional Economic Conference, Bellingham, WA, May 1983 (with Con H Schallau).

"Characterizing Economic Stability in Resource Dependent Communities," presented at the Twenty-Second Annual Meeting of the Western Regional Science Association, Honolulu, HI, February 1983 (with Con H Schallau).

"How to Win Friends, Influence People, and Sleep at Night While Using Economic Base Analysis," presented at the Nineteenth Annual Meeting of the Western Regional Science Association, Monterey, CA, February 1980.

"Impact Analysis in the Rural West," presented at the Annual Meeting of the Association of University Bureau of Economic Research (AUBER), Keystone, CO, October 1978.

"Economies and Diseconomies of City Size," presented at the Seventeenth Annual Meeting of the Western Regional Science Association, Sacramento, CA, February 1978.

"Impact Analysis with a Two-Sector Income Model," presented at the Sixteenth Annual Meeting of the Western Regional Science Association, Tucson, AZ, February 1977.

"Economic Growth and Local Government Costs," presented at Local Government; Problems and Prospects, a Symposium at University of Montana, Missoula, MT, November 1975.

"An Income Model for the State of Montana," presented at the Ninth Annual Pacific Northwest Regional Economics Conference, Spokane, WA, April 1975.

"Localized Employment in SMSAs," presented at the Twelfth Annual Meeting of the Western Regional Science Association, Monterey CA, February 1973.

"Short-Run Regional Models: Problems of Estimation and Interpretation," presented at the Eleventh Annual Meeting of the Western Regional Science Association, San Diego, CA, February 1972.

SERVICE TO THE UNIVERSITY

UM Strategic Planning Committee for Research
And Public Service
1997-1998

School of Business Administration Outreach Committee
1993-1998

Montana University System Enrollment Task Force (appointed by the Commissioner)	1981-1983
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Computer Users' Advisory Committee	1979-1982
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Research Advisory Council (Chair, 1979 - 1980)	1977-1980
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Academic Program Review to evaluate research and creative activity	1977
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University of Montana Accreditation Committee (appointed by the President)	1976-1978
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School of Business Administration Outreach Committee	1976-1977
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Graduate Council Committee to Evaluate Graduate Program in Economics (Chairman)	1975-1976
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Computer Users' Advisory Committee (Faculty Representative)	1972-1973
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President's Computer Evaluation and Selection Committee (Chairman) 1971-1972

Ad Hoc Computer Committee (appointed by the Budget and Policy Committee of the Faculty Senate) Summer 1971

PROFESSIONAL HONORS

Board of Directors, Association for University Business and Economic Research (AUBER)

President, 1989-90, Western Regional Science Association

Board of Directors, Western Regional Science Association

Board of Directors, Pacific Northwest Regional Economics Association

Listed in Who's Who in the West

OTHER ACTIVITIES

Numerous presentations throughout Montana before a variety of groups and organizations concerning local economic conditions and the outlook for the future.

Featured speaker at the **Mountain States Regional Economic Outlook Conference**, Denver, CO, NM, September 1998.

Featured speaker at the **Mountain States Regional Economic Outlook Conference**, Denver, CO, NM, June 1996.

Program and facilities chair, **Twenty Ninth Annual Pacific Northwest Regional Economic Conference**, Missoula, MT, May 1995.

Program and facilities chair, **Twentieth Annual Pacific Northwest Regional Economic Conference**, Missoula, MT, May 1986.

Featured speaker at the **Mountain States Regional Economic Outlook Conference**, Albuquerque, NM, March 1983.

Featured speaker at the Workshop on Financing Structures and Availability of Capital, presented by the Western Governor's Policy Office (WESTPO), Denver, CO, August and September 1981.

Featured speaker at the Montana Economic Outlook Seminars, annual meeting since 1976.

Frequent interviews, featured guest, and information source for the Great Falls Tribune, the Billings Gazette, the Missoulian, the Montana Television Network, KECI-TV (Missoula), KPAX-TV (Missoula), KFBB-TV (Great Falls), KULR-TV (Billings), and other news media.

Montana Housing Board, a quasi-judicial board of the state of Montana charged with administering a statewide housing assistance program. Appointed by the Governor to a term expiring in January 1977.

Montana Future Process Task Force. A committee appointed by the Governor to design, implement, and evaluate economic models for Montana.

Biography of Paul E. Polzin

Professor Paul E. Polzin is Director of the Bureau of Business and Economic Research and a Professor in the Department of Management. Dr. Polzin has been at the University of Montana since 1968.

Professor Polzin grew up in Detroit, Michigan. He attended the University of Michigan and Michigan State University. He was granted a Ph.D. in Economics by Michigan State University in 1968.

Professor Polzin has extensively studied the Montana economy during the past thirty years. He has published numerous studies of the long-term and short-term economic trends in Montana, and for certain areas within the state. He has also made economic projections for the future. Each year, Professor Polzin is a featured speaker at the Montana Economic Outlook Seminars, which are presented at various locations throughout the state. He is frequently quoted by newspapers and television and radio stations.

James T. Sylvester

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Education

The University of Montana Missoula, Montana

Master of Arts, Economics, 1990

University of Utah Salt Lake City, Utah

Bachelor of Arts, Economics, 1975

Professional experience

Bureau of Business and Economic Research

The University of Montana Missoula, Montana

Economist (July 1990-Present).

Principal investigator for contract research projects requiring survey administration and statistical analysis. Provided state government with economic forecasts for Montana. Performed statistical analysis and computer processing for other BBER staff members. Worked as Montana liaison to the U. S. Census Bureau for review of population estimates and projections.

Statistician (July 1985-June 1990).

Performed statistical analysis and computer processing for other BBER staff members. Developed databases for BBER contract research projects.

Research Assistant (November 1980-June 1985).

Assisted other BBER staff members on contract research projects. Performed all BBER computer processing.

Consultant

1985-Present.

Consulted on research projects requiring survey administration and statistical analysis. Clients included Indian tribes, local governments, financial institutions and

private individuals. Projects included market research, psychological studies, housing and economic studies.

Publications and Presentations

"The Migration Behavior of Great Plains Residents," with Christiane von Reichert, presented at the Symposium on Local and State Policy for Addressing Rural communities and Population Loss, April 11-12, 2002, at Dickinson ND.

"How You Gonna Keep 'Em Down on the Farm", with Christiane von Reichert, *Montana Business Quarterly*, Winter 2001.

"Fishing or the Opera? Montanans Talk About Quality of Life Choices", *Montana Business Quarterly*, Summer 1999.

"Why People Live In Montana" presented at the Pacific Northwest Regional Economic Conference, May 6-7, 1999 at Boise, ID.

"From Convenience Stores to Casinos; Gambling Montana Style," with Paul E. Polzin, John Baldridge, Daniel Doyle, Rachel A. Volberg, and W. Lamar Moore. *Montana Business Quarterly*, Winter 1998.

"Motives for Migration: A Study of Montana Newcomers," with Christiane von Reichert. *Montana Business Quarterly*, Winter 1998.

"Return Migration To Montana: What Brings People Home," with Christiane von Reichert, presented at the Pacific Northwest Regional Economic Conference, April 24-26, 1998, at Tacoma, WA.

"Return Migration to Montana: Motives and Patterns," with Christiane von Reichert, presented at the annual national meeting of the Association of American Geographers in Boston, March 1998.

"Population Dynamics in Montana," with Christiane von Reichert. *Montana Business Quarterly*, Winter 1997.

"Population Increases by County," *Montana Business Quarterly*, Summer 1997.

"Why People Move To Montana," presented at Pacific Northwest Regional Economic Conference, April 24-26, 1997, Spokane, WA.

"Are Newcomers Different Than Oldtimers: Montana Migration Patterns," presented at the Pacific Northwest Regional Economic Conference, May 2-4, 1996, Portland, OR.

"Montana Migration Patterns," with Susan Selig Wallwork, Paul E. Polzin, and Marlene Nesary, *Montana Business Quarterly*, Autumn 1995.

Montana Airport Multimodal Study: Part I Methods and Results with Susan Selig Wallwork, Paul E. Polzin, and Marlene Nesary, 1995.

"Montana's Major Airports: Economic Activity Profiles," **Montana Business Quarterly**, Winter 1995.

"Snowmobiling in Montana, An Update," October 1994 with Marlene Nesary.

"Eastern Montana Telemedicine Project: Who Saves?," presented at the 28th Annual Pacific Northwest Regional Economic Conference, April 27-29, 1994, Seattle, WA.

"Identifying Service-Related Industries with Basic Appeal," presented at the 26th Annual Pacific Northwest Regional Economic Conference, April 30-May 2, 1992, Victoria, British Columbia.

"Top-down vs. Bottom-up: Which Is Better for Forecasting Montana's Construction Industry?," presented at the 25th Annual Pacific Northwest Regional Economic Conference, May 2-4, 1991, Bellingham, WA.

"Economics Montana: Regional Models and Forecasts," Montana Business Quarterly, Summer 1991.

"Forecasting With Transfer Functions: A Local Example," presented at the annual meeting of the Montana Chapter of American Statistical Association, October 13, 1989, Helena, MT.

"Expanding the Utility of the Economic Base Model: Inter-sectorial, Spatial and Inter-temporal Considerations," presented at the 29th annual meeting of the Western Regional Science Association, February 21-25, 1990, Molokai, HI.

"The Economic Base Model: Alternative Methods On Analysis and Their Application to Rural Areas," with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at the 24th Annual Pacific Northwest Regional Economic Conference, April 26-28, 1990, Bellingham, WA.

"A Comparison of the Effects of Wood Products and Public Works Activities on Local Economies in Northwestern Montana," with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at the 24th Annual Pacific Northwest Regional Economic Conference, April 26-28, 1990, Bellingham, WA.

"How Careful Must You Be When Using the Economic Base Model," with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at the 23rd Annual Pacific Northwest Regional Economic Conference, April 27-29, 1989, Corvallis, OR.

“New Tests of the Time Dimension in Economic Base Analysis,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at annual meeting of the Western Regional Sciences Association, February 24-28, 1988, Napa Valley, CA.

“Lags and Logs: Distributed Lag Models of Timber Dependent Communities in the Pacific Northwest,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at the 22nd Annual Pacific Northwest Regional Economic Conferences, April 28-30, 1988, Boise, ID.

“Forecasting Accuracy and Structural Stability of the Economic Base Model,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, Review of Regional Studies, Summer 1988.

“The Role of Transfer Payments and Property Income in Economic Base Analysis,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at annual meeting of the Western Regional Sciences Association, February 18-22, 1987, Keauhou, HI.

“Transfer Payments and Property Income as Sources of Economic Growth in the Pacific Northwest,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at the 21st Annual Pacific Northwest Regional Economic Conferences, April 30 - May 2, 1987, Seattle, WA.

“How Accurate are Forecasts Based on the Economic Base Model?,” with Paul E. Polzin, Kent Connaughton, and Con H. Schallau, presented at annual meeting of the Western Regional Sciences Association, February 28 - March 2, 1986, Laguna Beach, CA.

“The Economic Base Model--An ARIMA Alternative,” presented at The 20th Annual Pacific Northwest Regional Economic Conferences, May 1-3, 1986, Missoula, MT.

Projects Completed

Transplan 21 – Project co-director. Responsible for all aspects of a survey of Montanans on transportation issues. 2003

Montana State Planning Grant – Project Survey Operations Director. Responsible for surveys administered By this project, including sampling, CATI programming, interviewer supervision, data cleaning and table preparation. 2003.

The Migration Behavior of Great Plains Residents – Project director. Responsible for all aspects of a survey of residents of the Northern Great Plains regarding migration behavior and quality of life issues. 2001.

Great Falls School District Population Projections – Contractor. Prepared methodology and long-range population projections for Cascade County, Montana and Great Falls School District. 2001.

American Indian Substance Abuse Study - Investigator. Responsible for data collection and preparation. prepared materials and trained interviewers on five Montana Indian Reservations. Coordinated interviewers, supervisors and data entry personnel as data were collected on the reservations. Collaborated with other investigators on sampling, questionnaire design, and data needs. 2000-2001

American Indian Construction Study – Investigator. Responsible for sampling, data gathering, and data cleaning. Collaborated with other investigators with analysis and report writing. 2000

Montana Micro-business Survey – Project Co-director. Responsible for sampling, data gathering, and data cleaning. Collaborated with other investigators with analysis and report writing. 2000

Missoula County Household and Population Projections. Contractor. Prepared methodology and long-range population projections for Missoula and Ravalli Counties. 1998-1999.

Montana Resident Travel Study - Project director. A project sponsored by the Institute for Tourism and Recreation Research. Responsible for sampling, data gathering, and data cleaning. Collaborated with other investigators with analysis and report writing. 1998-1999.

Montana Power Company Market Research - Project director. Responsible for instrument development, data gathering, data cleaning for ongoing market research of the Montana Power Company. 1998-2000.

Montana Department of Transportation Study – project co-director. Developed CATI program for survey, administered the questionnaire, provided data for analysis. 1997, 1999.

Montana Gambling Study - Investigator. Collaborated with other investigators with analysis and report writing. 1997-1998.

Montana Snowmobiling Study: 1998 - Project director. A project sponsored by the Montana Snowmobile Association and Montana Department of Fish, Wildlife and Parks. Completed project including written report. Presented results to the annual meeting of the Montana Snowmobile Association. 1998.

Off-Highway Vehicles in Montana: A Preliminary Assessment. Project director. Revised report to include estimates of various OHV development scenarios. Included a written report. 1998.

References

Paul Polzin, Director
Bureau of Business and Economic Research
The University of Montana-Missoula
406-243-5114

Nancy Leifer
Missoula Housing Authority
543-5153

Bob Walker
Montana Department of Fish, Wildlife and Parks
406-444-4585

JOHN D. BALDRIDGE
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(406) 721-9836

EDUCATION **University of Chicago**
M.A., Public Policy Studies, Irving B. Harris Graduate School of Public
Policy Studies, June 1992
Area of Concentration: Urban Political Economy

Simpson College (Iowa)
B.A., Political Science, Magna cum Laude, May 1990

PROFESSIONAL EXPERIENCE

Proposal Writing/ Survey Research & Analysis	The University of Montana-Missoula, Bureau of Business and Economic Research, Director of Survey Development (January 1999 to present) Develop marketing plan for Bureau survey research. Conduct focus groups and worldwide web surveys. Win research contracts and grants for the Bureau. Develop questionnaires and plan research. Conduct research and policy analysis. Write research reports and scholarly journal articles. Make presentations to clients, interested organizations, and gatherings of scholars.
Policy Analysis/ Writing	City of Missoula, Missoula Measures (Contract, March 1998 to January 1999) Research, draft, and publish document of economic indicators for use by policy makers and public. Analyze local and regional economy. Interview key regional policy makers, determine appropriate indicators for publication.
Policy Analysis/ Survey Research/ Management	Gambling Study Commission, State of Montana (Contract, November 1997 to September 1998) Planned study. Negotiated with client on study design. Designed questionnaires for the Survey of Montana Gambling Establishments, Survey of Gamblers Anonymous Members, and Inpatient Gambling Treatment Center Census. Trained interviewers on questionnaire administration. Coordinated data collection. Coordinated work elements among study team. Reviewed data quality and prepared data sets for analysis. Presented progress reports to client. Analyzed data. Co-author of final report to the Commission.
Market Research/ Questionnaire Design	Montana Power Company (Contract, September 1997 to present) Consulted with client to design questionnaire, trained interviewers on questionnaire administration, verified Computer-Assisted Telephone Interviewing programming of questionnaire.

Policy Analysis/ Survey Research/ Management	Department of Transportation, State of Montana, Public Involvement Survey (May to August 1997) Principal Investigator for the 1997 Montana Public Involvement Survey. Designed, managed, and analyzed survey. Authored proposal that won contract away from firm which conducted 1994 baseline survey. Drafted and managed study budget. Designed questionnaire and sample in consultation with MDT staff. Trained subcontractor interviewers. Supervised field test. Conducted extensive statistical analysis of data collected. Authored two-volume <u>1997 Montana Public Involvement Survey Final Report</u> .
Policy Analysis/ Project Management	City of Missoula, Coordinator (Contract, September 1996 to April 1997) Managed planning to establish and implement neighborhood councils in Missoula. Examined models of neighborhood participation, studied public perceptions of neighborhood, mapped neighborhoods in Missoula, evaluated City of Missoula's Early Notification System. Facilitated the deliberation of eleven committee members appointed by the City Council. Administered a survey of interested citizens. Managed communication between the committee and the City Council. Coordinated public meetings. Coordinated production of committee's final report. Drafted a budget for neighborhood councils, and drafted an ordinance enacting neighborhood councils.
Local Government Policy Analysis	City of Missoula, Missoula Valley Fire Service Integration Project (October 1996 to December 1996, 12 week contract) Provided senior city policy-makers information needed to recommend and negotiate measures to more closely integrate fire protection in the Missoula Valley. Summarize current fire protection capabilities of six regional departments. Summarized current service costs, and tax revenue generated. Utilized transportation analysis zone-based population projections to predict future regional fire protection requirements. Used geo-coded, taxable revenue data to project revenue for future urban fire district. Collaborated with GIS professionals to plot future urban fire district and future new fire station locations. Collaborated with firefighters, city engineering and finance department staff.
Policy Analysis/ Project Management	City of Missoula, Coordinator (March 1995 to June 1996, fifteen month contract) Planned and managed constitutionally mandated study of the performance of Missoula's city government. Facilitated the productive deliberation of seven elected commissioners. Developed, implemented, and analyzed a study of 60 peer cities. Developed and analyzed a survey of Missoula's citizens administered by the University of Montana's Bureau of Business and Economic Research. Coordinated production of commission's final report and led the effort to draft a new charter for Missoula. Produced print, radio, and television advertising. Achieved voter approval of the charter and all recommended sub-options on June 4, 1996.
Writing/ Analysis/ Data Processing	National Opinion Research Center, Consultant (January 1995 to August 1995) Co-authored the <u>Second Follow-Up Sample Design Report</u> of the National Education Longitudinal Study of 1988. Analyzed the components of total survey error and made recommendations for corrective action to senior staff and to the U.S. Department of Education. Assessed data collected and implemented corrections, prepared data files for delivery to the Carolina Population Center of the University of North Carolina at Chapel

Hill for the Prospective Longitudinal Study of Adolescent Health.

Policy Analysis/ Project Coordination	<p>Office of the Commissioner of Higher Education, Montana University System, School-to-Work Research Associate (April 1994 to January 1995, nine month contract, grant-funded position)</p> <p>Conducted policy research and analysis required to design Montana's School-to-Work Opportunities System. Planned, implemented, and analyzed statewide surveys of high school principals, college/university chief executives, and business owners/human resource directors. Conducted assessment of federal and state child labor laws, and state workers' compensation policy. Analyzed school-to-work legislation, governance structures and funding mechanisms from ten states. Drafted school-to-work legislation. Helped to manage grant development/reporting activities. Developed a request for proposals (RFP) for sub-grants to schools and social service agencies statewide.</p>
University- Level Teaching	<p>University of Montana, Missoula, Instructor, Policy Analysis (Summer 1994)</p> <p>Required course (POSC 503) in the Master of Administrative Science program. The course is a survey of formal social science models with which analysts examine, draft, or evaluate policy, requiring that students apply theory to conduct public policy analysis.</p>
Writing/ Analysis/ Data Processing	<p>National Opinion Research Center (October 1990 to April 1994)</p> <p>Assistant Survey Director II (April 1993 to April 1994). Co-authored two data file user's manuals for the second follow-up of the National Education Longitudinal Study of 1988 (NELS:88). Analyzed data quality and implemented corrective action for six surveys conducted in the NELS:88 second follow-up. Reported on data quality to the U.S. Department of Education.</p>
Supervision/ Management	<p>Assistant Survey Director I (March 1992 to April 1993). Supervised 18 employees in the preparation and mailing of over 30,000 NELS:88 parent questionnaire packets. Developed mail shop training manual. Co-authored the Telephone Interviewer Procedures Manual. Conducted 3 day training sessions for 120 telephone interviewers. Supervised a research assistant and temporary clerical staff.</p>
Policy- Relevant Research	<p>Research Assistant (June 1991 to March 1992). Analyzed U.S. Census Bureau data and reviewed literature for the Director's speech at the NORC-Smithsonian Institution Symposium on Social Indicators, Washington, D.C., April 1992. Reviewed literature on sensitive questions for the National Health and Social Life Survey.</p> <p>Library Assistant (October 1990 to June 1991). Conducted extensive literature search for the <u>NORC Bibliography of Publications 1941-1991: A Fifty Year Cumulation</u>.</p>
Financial/ Grant Administration	<p>NORC Intern (Summer 1991). Developed and monitored the budget of the 53rd Street Study, an evaluation of police/community relations funded by a grant from the Eisenhower Foundation. Negotiated budgetary matters with the client, responsible for client relations.</p>

Leadership/
Planning/
Administration

U.S. Army Reserve (July 1985 to present)

Command Sergeant Major (Designee) (April 2004 to present). Senior enlisted advisor to 379th Engineer Battalion Commander. Responsible for individual training of 150 enlisted soldiers based in Missoula, MT. Keeper of the traditions of the U.S. Army within the Battalion. Responsible for good order and discipline of soldiers in the Battalion. Promotion effective 18 July 2005.

Master Sergeant (February 2003 to April 2004). Lead 51 soldiers in Iraq during Operation Iraqi Freedom, brought every soldier home safely. Introduced sound management processes into a command and control unit that supplied up to 42,000 United States and coalition soldiers with all types of supplies and services. Tracked over 2,000 missions in the logistics battle for all of southern Iraq. Participated in the first Iraqi Governing Council meeting at Ur. Participated in negotiations that led to successful logistics support agreements with militaries from Korea, Netherlands, Italy, United Kingdom, and the 25-nation Multi-national Division Central South (MND-CS) led by Poland. Significantly improved logistical operations of MND-CS.

First Sergeant (September 1999 to February 2003). Lead 59 soldiers. Supervise rigorous training of enlisted soldiers. Supervise provision of food, clothing, shelter, and supplies for all soldiers in unit. Supervise administration of soldiers' pay and benefits. Responsible for in excess of \$1,000,000 worth of government property.

Logistics Operations Non-Commissioned Officer (September 1993 to September 1999). Track logistics status and supply use during battle. Provide supply and maintenance support to up to 20,000 soldiers in high intensity combat. Provide command staff with consumption reports and forecasts, supervise and train clerical staff. Provide command staff with plans to support combat operations, including estimates of optimum use of personnel and equipment, and optimum support base locations.

Transportation Operations Administrative Supervisor (September 1990 to September 1993). Responsible for support of planning and operations for a transportation unit capable of supporting 60,000 soldiers in high-intensity combat. Assisted in supply route planning, analyzed and monitored air/sea/land vehicle and route traffic and capabilities for U.S. Army Europe (NATO). Assessed road, tunnel, bridge, rail, railhead, river (barge), airstrip, and port capabilities of countries in southern, central, and eastern Europe for U.S. Army Europe (NATO).

Training Sergeant (August 1988 to September 1990). Planned, conducted, and evaluated training for a 200 bed U.S. Army Reserve Station Hospital.

PUBLICATIONS

Ingels, S., and J. Baldridge. (1995). Technical Report: Guide to Longitudinal Analysis of the National Education Longitudinal Study of 1988. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement. NCES 95-05.

Ingels, S., Dowd, K., Baldridge, J., Stipe, J., Bartot, V., and Frankel, M. (1994). National Education Longitudinal Study of 1988 Second Follow-Up: Student Component Data File User's Manual. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement. NCES 94-374.

Ingels, S., Dowd, K., Stipe, J., Baldridge, J., Bartot, V., and Frankel, M. (1994). National Education Longitudinal Study of 1988 Second Follow-Up: Dropout Component Data File User's Manual. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement. NCES 94-375.

Karas, J., and Baldridge, J. (1995). School-to-Work: A New System of Education and Training. In Public Education Policy Issues in Montana. Hitz, R., and Chambers, K., eds. Bozeman, MT: Burton Wheeler Center.

Polzin, P., Baldridge, J., Doyle, D., Sylvester, J., Volberg, R., and Moore, W. (1998). From Convenience Stores to Casinos: Gambling Montana-Style. In Montana Business Quarterly. Polzin, P. and Jahrig, S. eds. Missoula, MT: Bureau of Business and Economic Research. Winter, 1998, pp. 2-14.

Shook, Steven, Yun Zhang, Rosemarie Braden and John Baldridge. (2002). The Use of e-Business in the Pacific Northwest Secondary Forest Products Industry. Forest Products Journal. 52(1):59-66.

Volberg, R., Gerstein, D., Christiansen, E., and Baldridge, J. (2001). Assessing Self-Reported Expenditures on Gambling. In Managerial and Decision Economics. Grinols, E. and Mustard, D. eds. New York, NY: John Wiley & Sons, Ltd.

SPECIAL SKILLS

Extensive experience in DOS, Windows, Macintosh, and UNIX computing environments. Proficient with word processing, spreadsheets, and database software packages. Extensive experience with SAS, SPSS, MINITAB, and STATA statistical software packages. Some mainframe computing experience.

HONORS

U.S. Army Reserve: The Bronze Star Medal, Army Commendation Medal w/2 Oak Leaf Clusters, Army Achievement Medal with four Oak Leaf Clusters; Global War on Terrorism Expeditionary Medal, Army Primary Leadership Development Course Honor Graduate; Superior Rating, Army Advanced Noncommissioned Officer's Course.

Simpson College: Omicron Delta Kappa, National Leadership Honor Society; Alpha Delta Lambda, National Continuing Students Honor Society.